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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/819,861	03/29/2001	Masayuki Negoro	030662-071	3745

7590 12/12/2003

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EXAMINER

SADULA, JENNIFER R

ART UNIT PAPER NUMBER

1756

DATE MAILED: 12/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/819,861	NEGORO ET AL.	
	Examiner	Art Unit	
	Jennifer R. Sadula	1756	

-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8-13 is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) Paper No(s). <u>20031125</u> . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>20031024</u> . | 6) <input type="checkbox"/> Other: |

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DETAILED ACTION

The following Office Action is a complete response to the amendment and arguments filed 10/24/2003.

Response to Amendment

The amendment has overcome the claim rejections based upon 35 USC 112, second paragraph. Examiner notes, however, that no substantive amendments have been made to the claims as the phrase “essentially vertically” is interpreted in accordance with Applicants’ definition on p42, 12-6 of the specification wherein the claim limitation remains as “in the range of 50° to 90°”.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 24 October 2003 has been considered by the examiner.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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Claims 1-7, are rejected under 35 U.S.C. 102(b) as being anticipated by Jones et al., U.S. Patent No. 5,990,997 ("Jones").

Jones teaches a twisted nematic LCD with negative tilted retarders for improved viewing characteristics wherein transparent substrates are located on opposite sides of nematic liquid crystalline layers such that the n_z optical axis or index is not perpendicular to the plane of the layer prior to excitation of the molecules (6:7-48). The liquid crystalline material may have a discotic structural unit and may be polymerized, however the compensator produces from such materials (wherein the surface has been rubbed for alignment purposes) has tilted optical axis T_1 and T_2 (interpreted as "essentially vertically" in accordance with Applicants' definition on p42, 12-6 of the spec). The azimuthal angles of optical axis T_1 and T_2 are defined as the axes project in the plan of the respective films (6:48-7:23). Thus the recitation of variance in tilt angles is satisfied. See also specifically figures 1(a) and 2(b), however the optical axis associated with each retarder extends substantially perpendicular to substantially parallel. With regard to claims 2-3, the plate or support of Jones can be any shape. The rubbing treatment is further disclosed throughout the specification and examples.

Claims 1-7, are rejected under 35 U.S.C. 102(e) as being anticipated by Mori et al., U.S. Patent No. 6,184,957 ("Mori").

Mori teaches a liquid crystal display comprising a pair of transparent substrates wherein the liquid crystal is aligned parallel to a plane of the substrate and an optical compensatory sheet having an optically negative uniaxial property and an optical axis parallel to a plane of the sheet (abstract). The liquid crystal molecules are scarcely tilted to a plane perpendicular to the

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substrate to improve the viewing angle character and may be discotic in nature, although various polymers and liquid crystalline compounds can be employed (10:5-40). Figure 5 shows an example of the relationship of the polarization axis, the axis of the optical compensatory sheet and the rubbing direction of the orientation layer of the cell utilized in IPS mode. The liquid crystal aligns parallel to a plane of the substrate and varies its direction of molecular major axis on a plane parallel to the plane of the substrate under variation of voltage- thus the variance is from parallel to perpendicular thereby satisfying the limitation of “essentially vertically of claim 1 and 4 (5:3-14) (wherein the phrase “essentially vertically” is interpreted in accordance with Applicants’ definition on p42, 12-6 of the spec as 50-90°).

With regard to claims 2-3, the plate or support of Mori can be any shape. The rubbing treatment is further disclosed in column 12, lines 15-26.

Response to Arguments

Applicant's arguments filed 10/24/2003 have been fully considered but they are not persuasive.

With regard to Jones, Applicants argue, “Jones et al does not disclose each feature of aspects of the present invention defined by claims 1 and 4. For example, Jones et al does not disclose an optically anisotropic layer formed from discotic liquid crystal molecules, wherein all the discotic liquid crystal molecules are essentially vertically aligned, as recited in claims 1 and 4.” (arguments, p7). Examiner once again notes that the phrase “essentially vertically” is interpreted in accordance with Applicants’ definition on p42, 12-6 of the specification wherein

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the claim limitation remains as "in the range of 50° to 90°" and as such no substantive amendments have been made to the claims.

Applicants further argue, "Clearly, the disc-like molecules of Jones et al which have polar angles that vary through a wide range of angles, are not the same as the recited discotic liquid crystal molecules which are all essentially vertically aligned. Jones et al simply has no disclosure of such feature." Examiner notes that Applicants claim language recites that all molecules be "essentially vertically" aligned wherein "essentially vertical" is defined as a range of angles. Thus, if some molecules are 50° and some are 90° and some are even aligned to 75°, all of these molecules are interpreted as satisfying the limitation of "essentially vertically" aligned.

With regard to the teaching of Mori, Applicants argue, "Clearly, the liquid crystal of Mori et al relied upon by the Patent Office is not the same as the discotic liquid crystal molecules which form the optically anisotropic layer, because Mori et al has no disclosure that such liquid crystal forms an optically anisotropic layer." Examiner once again notes that Mori teaches a liquid crystal display comprising a liquid crystal aligned parallel to a plane of the substrate and an optical compensatory sheet having an optically negative uniaxial property and an optical axis parallel to a plane of the sheet (abstract). According to Hawley's Condensed Chemical Dictionary (14th edition), the term "anisotropic" is defined as a descriptor of crystals "whose index of refraction varies with the direction of the incident light" and such a property is true of "most crystals... it is not true of isometric (cubic) crystals which are isotropic." It is unclear how the Applicants can argue that the liquid crystals of Mori are non-anisotropic as Mori teaches the materials to retain variance in its direction of molecular major axis on a plane parallel to the

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plane of the substrate under variation of voltage- thus the variance is from parallel to perpendicular.

Applicants further argue with regard to Mori that Mori et al fails to disclose an optically anisotropic layer formed from discotic liquid crystal molecules, wherein all the discotic liquid crystal molecules are essentially vertically aligned, as recited in claims 1 and 4. Examiner once again notes that Applicants claim language recites that all molecules be “essentially vertically” aligned wherein “essentially vertical” is defined as a range of angles. Thus, if some molecules are 50° and some are 90° and some are even aligned to 75°, all of these molecules are interpreted as satisfying the limitation of “essentially vertically” aligned.

Allowable Subject Matter

Claims 8-13 are allowable over the prior art.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer R. Sadula whose telephone number is 571.272.1391.

The examiner can normally be reached on Monday through Friday, 10am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark F. Huff can be reached on 571.272.1385. The fax phone numbers for the organization where this application or proceeding is assigned are 703.872.9310 for regular communications and 703.872.9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.308.0661.

A handwritten signature in black ink, appearing to read "Mark F. Huff", is written over a large, stylized "Z" or "2".

MARK F. HUFF
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700

JRS
December 11, 2003